

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (Currently Amended): Apparatus for determining positional information relating to an object, comprising:[]]

a receiver ~~means for receiving~~, comprising a plurality of receiving elements;

a detector ~~detection means~~ for detecting signals received at the receiving elements and for generating output signals representative of the received signals; and

a processor ~~processing means~~ operable to apply, for each receiving element, a process to the output signal generated from the signal received at that receiving element separately from any output signal generated from a signal received at any other receiving element, so as to obtain a respective value of a parameter representative of the signal received at that receiving element, the processor ~~processing means~~ being further operable to compare the values of the parameter thus obtained so as to obtain positional information relating to the object.

Claim 2 (Original): Apparatus according to Claim 1, wherein the parameter is one of phase and time.

Claim 3 (Currently Amended): Apparatus according to Claim 1, wherein the process to be applied by the processor ~~processing means~~ is dependent upon a characteristic, or an expected characteristic, of the signals.

Claim 4 (Original): Apparatus according to Claim 3, wherein the characteristic, or expected characteristic, is at least one of frequency, phase, bandwidth, and pulse width.

Claim 5 (Currently Amended): Apparatus according to Claim 1, wherein the process to be applied by the processor ~~processing means~~ is dependent upon a characteristic, or expected characteristic, of the object, and preferably is dependent upon the distance, or the expected distance, of the object from the receiver ~~receiving means~~.

Claim 6 (Currently Amended): Apparatus according to Claim 1, further comprising a selector ~~selecting means~~ adapted to select the process to be applied by the processor ~~processing means~~ from a plurality of possible processes.

Claim 7 (Currently Amended): Apparatus according to Claim 6, wherein: ~~[[-]]~~
the apparatus comprises memory ~~means~~ for storing a plurality of sets of process data; and

the selector ~~selecting means~~ is adapted to select one set of process data from the plurality of sets of process data, thereby to select the process to be applied by the processor ~~processing means~~.

Claim 8 (Currently Amended): Apparatus according to Claim 1, further comprising means for changing the process to be applied by the processor ~~processing means~~ in dependence upon at least one previously obtained value of the parameter ~~and/or parameter~~ and/or in dependence upon previously obtained positional information relating to the object.

Claim 9 (Previously Presented): Apparatus according to Claim 1, wherein the process comprises a matched filter.

Claim 10 (Original): Apparatus according to Claim 9, wherein the process comprises applying a filter to the output signal at a plurality of different time offsets and selecting a time offset in dependence upon the outputs from the filter.

Claim 11 (Currently Amended): Apparatus according to Claim 1, wherein the operation of the processor ~~processing means~~ comprises application of a matched filter to detect the interval between signals received by a plurality of the receiving elements, whereby to determine an angular position of the object.

Claim 12 (Currently Amended): Apparatus according to Claim 9, comprising a matched filter generator ~~means~~ for generating the matched filter in dependence upon the shape of the at least one time varying signal, and preferably in dependence upon the shape of the envelope of the at least one time varying signal.

Claim 13 (Currently Amended): Apparatus according to Claim 12, wherein the matched filter generator ~~generating means~~ is adapted to fit the shape of the at least one time varying signal, or the envelope of the at least one time varying signal to a function, preferably to a quadratic function.

Claim 14 (Currently Amended): Apparatus according to Claim 1, wherein the receiver ~~receiving~~ and detector ~~detecting means~~ are adapted to receive and detect a signal having a bandwidth greater than 5%, 10% or 20% of its frequency.

Claim 15 (Previously Presented): Apparatus according to Claim 1, wherein each signal has a characteristic frequency of between 0.5GHz and 24 GHz, preferably between 2GHz and 12GHz, and more preferably between 5.8GHz and 7.2GHz.

Claim 16 (Previously Presented): Apparatus according to Claim 1, wherein the signals are pulsed signals.

Claim 17 (Original): Apparatus according to Claim 16, wherein each pulsed signal comprises at least five cycles, and preferably comprises at least 10, 20, 50, 100 or 500 cycles.

Claim 18 (Previously Presented): Apparatus according to Claim 16, wherein each pulsed signal has a pulse length of greater than 2ns, preferably greater than at least one of 5ns, 10ns, 20ns, and 50ns.

Claim 19 (Previously Presented): Apparatus according to Claim 16, wherein the signals comprise a pulse train having a characteristic repetition frequency of between 2MHz and 20 MHz, possibly between 5MHz and 15 MHz, and possibly between 10.5MHz and 13.5MHz.

Claim 20 (Previously Presented): Apparatus according to Claim 1, wherein the positional information is an angular position of the object.

Claim 21 (Currently Amended): Apparatus according to Claim 1, further comprising a transmitter ~~means~~ for transmitting a probe signal towards the object, and wherein the receiver ~~means for receiving~~ is adapted to receive a reflection of the probe signal from the object.

Claim 22 (Currently Amended): Apparatus according to Claim 21, wherein the transmitter ~~means for transmitting a probe signal~~ is adapted to transmit a different signal to the signal transmitted by a transmitter associated with the object.

Claim 23 (Currently Amended): Apparatus according to Claim 21, further comprising an encoder ~~means~~ for encoding the probe signal, whereby it can be distinguished from the signal received from the object.

Claim 24 (Currently Amended): Apparatus according to Claim 21, further comprising a circuit ~~means~~ for determining the positional information of an object irradiated by the probe signal.

Claim 25 (Currently Amended): Apparatus according to Claim 24, further comprising a comparator ~~means~~ for comparing the positional information of the irradiated object to positional information relating to at least one known object, whereby anomalous objects can be identified.

Claim 26 (Currently Amended): Apparatus according to Claim 25, further comprising an alert signal generator ~~means~~ for generating an alert signal in dependence on the result of the comparison.

Claim 27 (Previously Presented): Apparatus according to Claim 25, wherein the or each object includes or comprises an object incorporating a transmitter.

Claim 28 (Previously Presented): Apparatus according to Claim 1, wherein the signals are signals transmitted by a transmitter associated with the object.

Claim 29 (Original): Apparatus according to Claim 28, wherein the signals transmitted by the transmitter associated with the object are Ultra Wide Band (UWB) signals.

Claim 30 (Currently Amended): A method ~~Method~~ of determining positional information relating to an object, comprising: ~~[[-]]~~
receiving signals at a plurality of receiving elements;

detecting signals received at the receiving elements and for generating output signals representative of the received signals; and

processing, for each receiving element, the output signal generated from the signal received at that receiving element separately from any output signal generated from a signal received at any other receiving element, so as to obtain a respective value of a values of the parameter thus obtained so as to obtain positional information relating to the object.

Claims 31-89 (Canceled).

Claim 90 (New): Apparatus for determining positional information relating to an object, comprising:

means for receiving, comprising a plurality of receiving elements;

detection means for detecting signals received at the receiving elements and for generating output signals representative of the received signals; and

processing means operable to apply, for each receiving element, a process to the output signal generated from the signal received at that receiving element separately from any output signal generated from a signal received at any other receiving element, so as to obtain a respective value of a parameter representative of the signal received at that receiving element, the processing means being further operable to compare the values of the parameter thus obtained so as to obtain positional information relating to the object.